Canadian researchers study mass gatherings and risks of infectious disease threats

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As the world watches the Vancouver Olympics, researchers at St. Michael's Hospital in Toronto and Children's Hospital Boston have teamed up to monitor and assess potential infectious disease threats to Vancouver during the Winter Games by integrating two independently developed intelligence systems that focus on global infectious diseases; bio.DIASPORA and HealthMap.

The communicating systems, developed by two Canadians - Dr. Kamran Khan at St. Michael's and Dr. John Brownstein of the Informatics Program at Children's Hospital Boston - are now producing the first, real-time analyses on potential threats to mass gatherings. The collaboration, and corresponding analysis of threats to the Olympic Games, is described in an article published online by the Canadian Medical Association Journal today.

"Mass gatherings can potentially amplify and disperse infectious disease threats globally because they can draw millions of people from around the world into a single space," says Dr. Kamran Khan, an infectious disease physician and scientist at St. Michael's Hospital. "By enabling our two systems to communicate in real-time, we are exploring new ways to generate actionable intelligence to organizers of mass gatherings."

Dr. Khan is the developer of bio.DIASPORA, which enables the study of global air traffic patterns and applies this knowledge to help the world's cities and countries better prepare for and respond to emerging infectious diseases threats. Dr. Brownstein is a co-founder of

HealthMap, an online global disease-tracking and mapping tool which leverages information sources on the Internet to detect infectious disease outbreaks around the world.

For the 2010 Winter Olympic Games, Dr. Khan analyzed recent worldwide air traffic patterns during the month of February, to predict where passengers travelling into Vancouver would be originating from. His team found that nearly two-thirds of all international passengers traveling to Vancouver came from just 25 cities. Dr. Brownstein's team then concentrated its infectious disease surveillance efforts on those cities, which it continues to do on an hourly basis during the course of the Winter Games (a real-time view of this analysis is available online at http://www.healthmap.org/olympics).

"Internet-based, geographically-directed infectious disease surveillance may greatly compliment traditional preparations for infectious disease threats at mass gatherings by identifying infectious disease at their source and potentially preventing importation/exportation of infection among attendees," explains Dr. Brownstein at Children's Hospital. "We look forward to continued research and dialogue in this area and seeing how the information we glean from monitoring these Games may be useful in terms of preparing for future mass gatherings like the upcoming G20 Summit in Ontario, Canada and this year's FIFA World Cup in South Africa."

Provided by St. Michael's Hospital